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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/867,098	05/29/2001	Yasunori Takahashi	NEC 01FN014	6453

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EXAMINER
ANYASO, UCHENDU O

ART UNIT	PAPER NUMBER
2675	6

DATE MAILED: 03/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/867,098	TAKAHASHI, YASUNORI	
	Examiner	Art Unit	
	Uchendu O Anyaso	2675	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 May 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2-4* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

1. **Claims 1-14** are pending in this action.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. **Claims 1-3** and **8-10** are rejected under 35 U.S.C. 102(e) as being anticipated by Kasahara (U.S. 6,388,678).

4. Regarding **independent claim 1**, and for **claims 2** and **3**, Kasahara teaches a display in the form of a plasma display panel comprising a first input terminal 2 which receives an analog input signal (*see* input to A/D converter 8, figure 9 at 8).

Furthermore, Kasahara teaches a second input terminal (HD, VD) that receives a digital signal (*see* figure 9 at HD, VD, 36).

Also, Kasahara teaches how the A/D converter 8 is connected to the first input terminal 2 (figure 9 at 2).

Furthermore, Kasahara teaches a first switch in the form of an image characteristic determining device 30 which selects for output between a digital signal outputted from the A/D converter 8 via the reverse gamma correction device 10, peak level detector 26 and average level detector 28, and a digital signal inputted from the second input device via the vertical synchronizing frequency detector 36 (*see* figure 9 at 10, 26, 28, 36).

Furthermore, Kasahara teaches a display gradation adjusting device 14 that converts a digital signal outputted from the image characteristic determining device 30 into a signal indicative of a level of pseudo gradation (*see* column 14, lines 14-30, figure 9 at 14, 30).

Also, Kasahara teaches an error diffusion circuit 62" which converts a signal indicative of pseudo gradation by an error diffusion method (column 27, lines 8 through column 28, line 3, figures 23, 24A, 24B).

Furthermore, Kasahara teaches a dither pattern circuit 62' which converts a digital signal into a signal indicative of a level of pseudo gradation by a dithering method (*see* column 26, lines 35 through column 27, line 7, figures 21, 22A-22H).

Also, Kasahara teaches a second switch in the form of a spatial density changing circuit 62 which selects when either the error diffusion circuit 62" or the dither pattern circuit 62' is used (column 26, lines 31-34).

Regarding **claims 8-10**, in further discussion of claim 1, Kasahara teaches a data driver 20 which receives an output of the second switch i.e., spatial density changing circuit 62, and a PDP 24 that is driven by the data driver 20 (*see* figure 19, 20 at 20, 24, 62).

Claim Rejections - 35 USC ' 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. **Claims 4-7** and **11-14** are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasahara (U.S. 6,388,678) in view of *Miller et al* (U.S. 5,014,333).

Regarding **claims 4-7,** in further discussion of claims 1, Kasahara discloses the concept of pseudo-contour noise (column 3, line 66 through column 4, line 5). However, Kasahara does not teach how a noise detector determines whether an error diffusion or dither pattern is outputted. On the other hand, Miller et al teaches this concept by teaching how an image processor converts a multiple gray-level image to a bi-tonal image using both error diffusion and ordered dither by utilizing noise filters 32, 100 and comparator 22 such that smooth transitions are achieved between ordered dither and error diffusion (column 5, lines 47-51; column 6, lines 5-12, 39 through column 7, lines 52, figure 2 at 32, 20).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Kasahara and Miller because while Kasahara teaches how an error diffusion circuit 62" converts a signal indicative of pseudo gradation by an error diffusion method (column 27, lines 8 through

column 28, line 3, figures 23, 24A, 24B), and a dither pattern circuit 62' converts a digital signal into a signal indicative of a level of pseudo gradation by a dithering method (*see* column 26, lines 35 through column 27, line 7, figures 21, 22A-22H), Miller et al teaches the concept of achieving an image processor that converts a multiple gray-level image to a bi-tonal image using both error diffusion and ordered dither by utilizing noise filters 32, 100 and comparator 22 (column 5, lines 47-51; column 6, lines 5-12, 39 through column 7, lines 52, figure 2 at 32, 20). The motivation for combining these inventions would have been to achieve smooth transitions between ordered dither and error diffusion (column 5, lines 47-51).

Regarding **claims 11-14**, in further discussion of claim 4, Kasahara teaches a data driver 20 which receives an output of the second switch i.e., spatial density changing circuit 62, and a PDP 24 that is driven by the data driver 20 (*see* figure 19, 20 at 20, 24, 62).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 5,394,250 to *Shono* for a image processor capable of handling multi-level image data without deterioration of image quality in highlight areas.

U.S. Patent 5,920,646 to *Kamon* for a digital copying apparatus capable of forming a superior quality image with a reduced amount of memory.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uchendu O. Anyaso whose telephone number is (703) 306-5934. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703) 305-9720.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

or faxed to:

(703) 872-9314 (for Technology Center 2600 only)

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Uchendu O. Anyaso

03/20/2003

STEVEN SARAS
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